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Arthur D. Little, Inc.

September 19, 1983

Dr. Julie Yang
Manager - Research Technologies
W.R. Grace & Company
62 Whittemore Avenue
Cambridge, MA 02140

Dear Julie:

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Per our telephone conversation of September 14 regarding my letter report to you dated August 8, 1983, you asked if I could compute fiber concentrations for filter samples 191-78-9 and 191-78-12 for comparison to previously obtained optical microscope counts. For this purpose, you indicated sampling times of 197, 230 and 450 minutes for Samples -9, -12 and the Nuclepore filters, respectively, all at a rate of 2 liters per minute. All of the filters were 37 mm diameter, with an effective area of 8 cm^2.

In all, five individual samples were examined with the following results:

No.	Sample	Method	Fibers*	Fiber Concentration (Fibers/ml)
1	-9	SEM	35	0.32
2	-12	TEM	16	0.82
3	1-C(1)	TEM	43	0.20
4	1-C(2)	TEM	13	0.29
5	2C	TEM	60	0.35
3-5	--	TEM	116	0.27

* Fibers equal or greater than 5 μm long by 0.3 μm wide.

Sample -9 was analyzed by SEM at 500X in simulation of counting by optical microscopy. The presence of the filter background and relatively low contrast at this magnification probably leads to an underestimate of fibers. Likewise, the Nuclepore samples utilized filters with a 8 um pore size and it is likely that some fraction of particles (including fibers) was not collected. Therefore, Sample -12 is most appropriate for comparison to optical microscopy counting.

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In our letter report, we indicated that the percentage of tremolite fibers was in the range of 50 to 75 percent of the total. For Sample -12, this would indicate a tremolite fiber concentration of 0.41 - 0.62 fibers/ml. All the other samples, which probably underestimate true fiber content would indicate a range of 0.10 - 0.30 fibers/ml for tremolite fiber content.

I hope this provides you with the information that you requested.

Very truly yours,

Edward T. Peters

Edward T. Peters

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